

What is claimed is:

1. An atomization system (1) for fuels, particularly for charging a chemical reformer for obtaining hydrogen, having at least one metering device (3), accommodated in a supporting device (2), for metering fuel into a temperature-adjusted substance stream,
5 wherein, the metering device (3) introduces the fuel directly into the temperature-adjusted substance stream without the interpolation of a supply line.
2. The atomization system as recited in Claim 1,
wherein, the metering device (3) features one or more openings for metering in fuel.
3. The atomization system as recited in Claim 1 or 2,
10 wherein, the metering device (3) is a fuel injector which ejects the fuel in a manner that is metered and processed, in particular is swirled.
4. The atomization system as recited in Claim 3,
wherein, the fuel injector is a high-pressure fuel injector operating with fuel pressures of 20 to 150 bar.
- 15 5. The atomization system as recited in one of the preceding claims,
wherein, the temperature-adjusted substance stream flows through the supporting device (2).
6. The atomization system as recited in one of the preceding claims,
wherein, the metering device (3) is thermally insulated from the supporting device (2).
7. The atomization system as recited in Claim 6,
20 wherein, the metering device (3) is thermally insulated by an insulating body (6).
8. The atomization system as recited in Claim 7,
wherein, insulating body (6) is at least partly made of a ceramic material.
9. The atomization system as recited in one of the preceding claims,
wherein, the metering device (3) is insulated from the supporting device (2) by a first gap
25 (10).
10. The atomization system as recited in Claim 7 or 8,
wherein, the metering device (3) is insulated from the insulating body (6) by a first gap (10).
11. The atomization system as recited in Claim 7, 8 or 10,
wherein, the metering device (3) touches the insulating body (6) only so as to prevent the
30 metering device (3) from deflecting vis-à-vis an axis (29).

12. The atomization system as recited in Claim 10 or 11,
wherein, the supporting device (2) is made up of a housing (4), through which the
temperature-adjusted substance stream flows, and an upper housing part (5), which does not
directly touch the housing (4).
- 5 13. The atomization system as recited in Claim 12,
wherein, the upper housing part (5) is insulated from the housing (4) by a second gap (11).
14. The atomization system as recited in Claim 12 or 13,
wherein, the upper housing part (5) rests only on the insulating body (6).
15. The atomization system as recited in Claim 12, 13 or 14,
10 wherein, the fixing elements (22) mutually lock the housing (4) and the upper housing part
(5) in place.
16. The atomization system as recited in Claim 15,
wherein, the fixing elements (22) are thermally insulated from the housing (4) and/or the
upper housing part (5) by insulating elements (23).
- 15 17. The atomization system as recited in Claim 16,
wherein, the insulating elements (23) are at least partly made of a ceramic material.
18. The atomization system as recited in one of Claims 12 through 17,
wherein, only the upper housing part (5) supports the metering device (3).
19. The atomization system as recited in one of Claims 12 through 18,
20 wherein, a third seal (16) between metering device (3) and upper housing part (5) seals the
first gap.
20. The atomization system as recited in Claim 19,
wherein, the third seal (16) is at least partly made of an elastomer.
21. The atomization system as recited in one of the preceding claims,
25 wherein, the metering device (3) meters fuel into a mixing area (7).
22. The atomization system as recited in Claim 21,
wherein, the temperature-adjusted substance stream is fed radially or at least partly
tangentially into the mixing area (7) via a supply line (12).
23. The atomization system as recited in Claim 21 or 22,

wherein, the temperature-adjusted substance stream fed from the supply line (12) into the mixing area (7) is directed away from the metering device (3) as it enters the mixing area (7).

24. The atomization system as recited in one of Claims 21 through 23,
wherein, the housing (4) features a recess (13) for inhibiting heat conduction.

5 25. The atomization system as recited in one of the preceding claims,
wherein, the outer surface area of the supporting device (2) increases by increments and/or
continuously starting from a flow outlet (9).

26. The atomization system as recited in one of Claims 21 through 24,
wherein, the outer surface area of the supporting device (2) increases counter to the direction
10 of flow prevailing within it, starting from a mixing area (7).